

Described from a single male in the Herbert H. Smith collection, taken at Chapada, Brazil, in January.

Protalebra brasiliensis n. sp.—Length 2.75 mm. Face elongate, vertex shorter than pronotum and tumidly angulate. Color sordid yellow. Vertex with three dark dots on basal margin. Pronotum and scutel dark fuscous; the former with three minute light dots anteriorly and four larger in a transverse row behind; scutel with a slender median line and a dot on either side light. Elytra with large lemon yellow areas as follows: one at base, one at middle of corium, and a common commissural area resting on apex of clavus; the basal area is just before basal margin and extends from costa to brachial cell; both are diagonal, extending up and back. The interspace between these areas is dark smoky, becoming lighter apically, the lips hyaline. The dark interspace with hya-

line spots, which are particularly noticeable just beyond transverse veinlets.

Described from many specimens in the Herbert H. Smith collection, taken at Chapada and Corumba, Brazil, from January to April. This species has somewhat of a resemblance in the character of the markings to certain *Typhlocybas* of the *comes* group.

Protalebra curvilinea (Gill.)

Protalebra bifasciata (Gill.)

Protalebra trimaculata (Gill.)

Protalebra robusta (Gill.)

These four species described under *Alebra* by Gillette, belong in *Protalebra*, of which genus *curvilinea* may be taken as the type. The types of all the species discussed above are now in the National Museum.

SOME CALIFORNIA BEES.

BY CARROLL FOWLER, DUARTE, CAL.

HERIADES Spinola.

One specimen belonging to this genus has been collected at Berkeley, and it represents a new species. The only other species recorded from this State is *H. albicinctum* Prov. from Los Angeles.

Heriades glaucum n. sp. — ♂. Length 5.5 mm. Bluish-green, clothed with thin white pubescence. Head broader than thorax, dark green, finely punctured, clothed with long white pubescence, dense on clypeus and cheeks; mandibles black. Antennae brownish-black, reaching to the base of the abdomen. Thorax dark bluish-green, finely and densely punctured, clothed with long pubescence, denser on metathorax and pleu-

ra. Wings with a brownish tinge darker in marginal cell; second submarginal cell a little longer than the first, narrowed nearly one half toward the marginal and receiving the first recurrent vein one fourth its length from base and the second one fifth from tip. Legs dark green, clothed with thin white pubescence, on tarsi beneath yellow; tibial spurs and claws brownish. Abdomen dark bronze-green with bluish reflection in certain lights; densely punctured, narrow apical margins of the segments smooth and pale brown; the whole clothed with a very short thin white pubescence longer and denser on the apical segments and venter.

Habitat. Berkeley, Cal. May 1. One specimen.

CALLIOPSIS Smith.

The following are the California species of *Calliopsis* in the collection of the University of California. All except *C. atriceps* are new to this State. The synopsis will serve to separate these.

First recurrent vein uniting with the second transverso-cubital vein.

Clypeus of ♂ yellow; ♀ with apical plate narrow, veins black . . . *clypeatus*.

Both ♂ and ♀ entirely black; ♀ with apical plate fairly broad, veins pale . . . *atriceps*.

First recurrent vein received by the second submarginal cell some distance from the second transverso-cubital vein.

Abdominal bands entire.

Postscutellum white . . . *scutellaris* ♂

Postscutellum black . . . *cinctus*.

Abdominal bands interrupted.

Abdomen with four yellow bands, the first two broadly interrupted on the disc . . . *visaliensis* ♀

Abdomen with five yellow bands, broadly interrupted laterally narrowly so in the middle . . . *anthidius* ♀

1. *Calliopsis clypeatus* Cress.—St. Helena, Cal., March 26. Fourteen specimens collected upon *Brassica campestris*. The ♀ differs from ♂ in being a little larger, of a duller black color, and having no yellow on the clypeus. Previously recorded from Colorado.

2. *Calliopsis atriceps* Cress.—Berkeley, Cal., March and April. Many specimens collected upon *Brassica campestris* and *Ranunculus californicus*. The female resembles the male very closely. They vary in length from 6 to 8.5 mm.

3. *Calliopsis scutellaris* n. sp.—♂. 7.5 to 8 mm. Black with yellow markings; postscutellum white. Head black, very finely but not closely punctured, uniformly clothed with white pubescence; spot between antennae and face beneath—except two small spots on the clypeus, one in the suture on each side of the clypeus, and one on the labrum—

sides of the face extending up almost as high as the anterior ocellus, and mandibles except tips yellowish white. Antennae white with a dark line above which toward the tips spreads out covering nearly the whole of the last three joints. Thorax black, densely punctured, clothed with rather dense white pubescence, sometimes tinged with yellowish above, sparse on disc of metathorax; tubercles except sometimes a brown spot on the middle, tegulae except an irregular brown patch near base, postscutellum and narrow line on scutellum, white. Wings hyaline, veins pale brown. Legs yellow, coxae and trochanters except at joints, and femora at base, and beneath except at apex, a large spot on all the tibiae beneath and a small one on the posterior tibiae above (sometimes indistinct) and sometimes the apical joints of the posterior tarsi black; pubescence on the legs white. Abdomen black, with broad yellowish or whitish bands on segments 1-5, narrowed slightly on the middle and more or less notched with black on the lateral apical portions; pubescence thin and whitish, becoming longer and denser toward apex. Venter black.

Habitat. Fresno, Cal. (H. O. Woodworth), May 4-9. Seven males, collected upon *Melilotus indica*.

4. *Calliopsis cinctus* Cress.—Tehachapi, Cal. (H. O. Woodworth), May 12. One male. Previously recorded from Nevada.

5. *Calliopsis visaliensis* n. sp.—♀. 7.5 mm. Black, abdomen with four yellow bands, the first two broadly interrupted on disc. Head black, finely and densely punctured on vertex, thinly and coarsely so on clypeus; clothed with whitish pubescence, very thin on clypeus; the lower lateral corners of the clypeus, a small spot on the middle near the apex, three spots just above the clypeus and the lower corners of the face yellow; mandibles black at tips and brownish or yellowish at base. Antennae black, becoming pale brown toward apex beneath. Thorax piceous-black with white pubescence

slightly tinged with yellow above, short on disc of mesothorax and sparse on disc of metathorax. Wings hyaline, veins brown. Legs black, more or less brownish on tibiae and tarsi, the four anterior tibiae white at base and on the anterior pair extending down a short distance in front is a brownish-yellow line; pubescence whitish tinged with yellow on tarsi beneath. Abdomen black, shining, almost nude except at base where there are some white hairs and at apex where the pubescence is rather dense; yellow bands on segments 1-4, those on 1-2 broadly interrupted on the disc and on 3-4 very slightly so; all are somewhat margined on the lateral apical portions. Venter black, apical margin of the segments brownish.

Habitat. Visalia, Cal. (H. O. Woodworth), May 9. One specimen.

6. *Calliopsis anthidius* n. sp.—♀. 10 mm. Black, abdomen with narrow yellow bands broadly interrupted on the sides. Head black, very finely and densely punctured on vertex; clothed with whitish pubescence, tinged with yellow above; all of the face beneath the antennae except three small

spots on clypeus near the base and one on the labrum, and mandibles except tips, yellow; the yellow on the sides of the face extends up a little higher than the antennae. Antennae black, flagellum pale yellowish beneath. Thorax entirely black, clothed with a dense whitish pubescence which has a brownish-yellow tinge above. Wings smoky becoming darker toward apical margins; veins black. Legs clothed with short white pubescence; black except a line on the anterior femora and on all the tibiae in front (interrupted on middle of posterior pair) and the tarsi entirely except a narrow black line on posterior pair behind, and the claws which are more or less brownish, yellow. Abdomen black, clothed with a very short pale pubescence; segments 1-5 with narrow yellow bands each slightly interrupted on the middle and broadly so latterly forming thus four elongate spots on each segment, those on the sides being the broadest. Venter black.

Habitat. Tulare, Cal. (H. O. Woodworth), May 10. One specimen.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—IV.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Therina eudropiaria Grt. and Rob.—The mature larva has been described by Goodell (Can. ent. xi, 194). His description, though short, is correct, if the structures that he calls "tubercles" be understood to be low rounded prominences of the skin and the words 6, 8 and 7th segments be changed to 6, 8 and 9th. Further as Goodell does not count the head as joint 1, his numbering of the segments should be increased by one in each case to correspond with mine.

Egg.—Several together, usually in a straight row of 5 to 9, sometimes more; irregularly elliptical, scarcely flattened, one end distinctly truncate, a little convex with a

rounded rim. Neatly, distinctly reticulate, the cell areas resembling round pits, the pitting extending also over the truncate end. Slightly bluish green, shining, soon turning dull reddish with a dark spot on the truncate end. Size .6 x .4 x .3 mm.

Stage I. Head round, pale brown; width about .3 mm. Body whitish translucent, a rather broad pale cinerous subdorsal band, leaving the dorsal and lateral areas pale. Setae fine, pointed, white, obscure. Appearance pale grayish, obscurely marked. After eating they became translucent green, the head brown, no marks.

Stage II. Head round, slightly bilobed,